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ODIN project

Strengthening Environmental Surveillance To Advance Public Health Action

Milestone 2.1

Stakeholders Workshop Report in Tanzania, Burkina Faso and Democratic Republic of Congo

Summary of the Milestone report M2.1 Stakeholder workshops arranged, and the questionnaire launched at TZ, DRC and BF

The main objective of the ODIN project, as part of an EDCTP3 programme "Genomic Epidemiology for the Surveillance and Control of Poverty-Related Infections and Emerging/Re-emerging Infections in Sub-Saharan Africa," is to establish an environmental surveillance program focused on specific human pathogens and determinants of antimicrobial resistance (AMR) in sub-Saharan communities. This aligns with Sustainable Development Goal 3, integrating mobile surveillance, rapid data processing, capacity building, and improving public health response to mitigate waterborne diseases and enhance overall disease epidemic preparedness and response in the region.

The ODIN Work Package 2 - Setting-up environmental surveillance system for multiple human pathogens - aims to strengthen the existing environmental surveillance system in three sub-Saharan countries: Tanzania, Burkina Faso and the Democratic Republic of Congo (DRC), and create environmental surveillance program for major infectious diseases agents and AMR occurring in sewage and non-sewage environments containing or contaminated with human excreta.

Here, the current document reports the workshop programs, lists of participants, brief minutes and content of the surveys conducted as part of the workshops organized in three sub-Saharan African countries. The aim of the workshops was to assess the status of clinical and environmental infectious disease surveillance systems in these countries and explore opportunities for raising awareness, discuss local needs and priorities, capacity building in WWS and explore collaborative opportunities for synergies and collaboration with existing programs. The workshop brought together the multidisciplinary team of experts from ministries of health and water authorities and agencies, scientific community from academia and research institutes, local epidemiologists, policymakers, non-governmental organizations (NGOs), and international and national experts specializing in these issues in our country.

To assess the existing gaps in the current environmental systems and the existence of the wastewater and environmental based surveillance systems, a two-day workshop was held in Dar es Salaam, Tanzania, 22-23 November 2023, a two-day workshop in Ouagadougou, Burkina Faso Burkina, 13-14 December 2023, and an one-day workshop was arranged in Kinshasa, DRC, 14 December 2023. The workshops included oral presentations, discussions based on the presentations, Mentimeter.com -survey about priority pathogens to be chosen for the ODIN project, and a questionnaire about the existing surveillance systems - both clinical and environmental - and gaps identified in those, as well as the identification of the potential of creating a strengthened environmental surveillance system.

The collected data as results of the surveys conducted among the workshop participants entail the existing surveillance systems will be collected, analyzed, and mapped to better understand actual gaps in wastewater and environmental based surveillance, including

regional differences among the participating countries. The survey results will be included in the scientific manuscript in early 2024 (*Deliverable D2.1*). The outcomes of the workshops serve as a starting point for ODIN WP2 Task 2.2, where an environmental surveillance scheme entailing the sampling sites and the priority pathogen selection will be defined for the study sites in the three sub-Saharan countries: Tanzania, Burkina Faso and DRC.

Introduction

The ODIN project aims to strengthen genomics and bioinformatics capacity, and database management skills for generating, maintaining, and querying large data sets, in sub-Saharan countries. Additionally, the project aims to develop a genomic surveillance system relying on environmental monitoring of major communicable disease agents in community wastewaters and other environmental samples.

The ODIN WP 2 - Setting-up environmental surveillance system for multiple human pathogens - is specially designed to provide an overall picture of the existing clinical and environmental surveillance systems and acknowledge possible gaps in the systems in three sub-Saharan Africa's countries: Tanzania, Burkina Faso and the Democratic Republic of Congo.

Utilizing expertise and connections of African partners, local stakeholders were mapped in all three countries, and workshops organised. This report provides a summary of these workshops.

Workshop organization

Workshop participants were selected using a Stakeholder Mapping Tool provided by The Global Health Network. The participants represented various groups and many of them provided a presentation from their own viewpoint to the environmental surveillance of disease pathogens and AMR (see Annexes A and B).

The survey for mapping the priority pathogens for the ODIN project was conducted through Mentimeter.com platform. The questions included waterborne pathogens, other pathogens and AMR targets, with participants asked to choose the pathogens in the prioritized order. There was also an option to name pathogens not on the provided list.

Harmonised questionnaire gathering information about existing clinical and environmental surveillance systems was conducted using Webropol platform. The questions were categorized into four categories: A) clinical surveillance/epidemiology, B) environmental surveillance (wastewater, water and water-based), C) challenges and limitations in the current systems and in the implementation of the new system, D) potential of environmental surveillance. Respondents' affiliation were also requested.

Presentations, discussions, and Q&A sessions during the workshop provided additional valuable information for the ODIN project. Meeting notes were taken on discussions and observations during the workshops, providing valuable input for further planning of the project implementation.

Conclusions

The workshops conducted as part of ODIN Work Package 2 played a central role in assessing existing situation and setting up strategies to strengthen environmental surveillance systems for multiple human pathogens in Tanzania, Burkina Faso, and the Democratic Republic of Congo in the context of One Health approach. The workshop also served as a platform for the stakeholders to connect, raise awareness and create collaboration and synergies with existing programs (eg. Polio Eradication), which are crucial for the foundation of sustainable and robust surveillance programs. The opinions of the workshop participants about priority pathogens, including waterborne pathogens, other pathogens and AMR targets, provides a strong basis for the ODIN project's next implementation phase. The later analysis of existing clinical and environmental surveillance systems, as captured in the Webropol questionnaire responses, will reveal valuable insights into the challenges, limitations, and potential areas for improvement. In conclusion, as the ODIN project progresses, the outcomes of these workshops will serve as a cornerstone for capacity building and developing a plan for implementing an effective multi-pathogens and AMR environmental surveillance system in sub-Saharan Africa.

Annexes

Annex A – Programs of the workshops

Annex B – Workshop Reports: The list of participants and brief minutes